Professional Development Seminars (PDS) are designed for staff, volunteers and other professionals from science, environmental, natural history, technology, art, history and other cultural institutions and centers in New England. PDS are designed as professional development opportunities to provide content and teaching resources for your staff as well as networking opportunities for professionals in non-formal education settings. Each PDS is a full day session. The mornings are spent exploring STEM content areas with scientists and policy makers. Afternoon sessions are skill-based, focusing on turning real-life science into exciting, inquiry-based, minds-on, hands-on lessons and activities for K-8 students and teachers based on state frameworks.

COST: The registration fee for participants is $15 (includes lunch). A discounted fee of $40 is offered for attending all three sessions.

For more information contact: MITS, 1354 Hancock St., Suite 302, Quincy, MA 02169, 617-328-1515, mits@mits.org, www.mits.org.

Registration is required. Please cut off and return form with check or purchase order payable to MITS, Inc.

PDS Registration Form

Name

Organization

Address

Phone Email

Please check seminars you will attend:

☐ February 25 $15 ☐ March 18 $15

☐ April 17 $15 ☐ All 3 Seminars $40 (discounted rate)

Total Amount Enclosed: _____

Registration fee includes lunch

The Museum Institute for Teaching Science
1354 Hancock Street, Suite 302
Quincy, MA 02169

MITS 2009 Professional Development Seminars

February 25, March 18, & April 17

9:30 am 3:30 pm

Investigating Water & Energy Initiatives & Current Research

Linking Scientific Content to Community & School Programs

MITS, Inc.
Museum Institute for Teaching Science

www.mits.org
mits@mits.org

Investigating Energy Concepts and the Inquiry-Based Classroom

Wednesday, February 25th
Higgins Armory Museum, Worcester, MA

Exploring Wind and Solar Energy: A Hands-on Approach to Renewable Energy

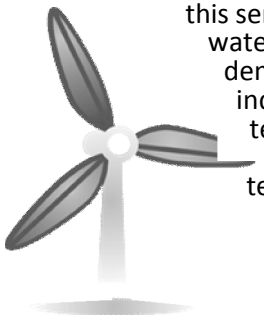
Patrick Quinlan, MS, PE, Associate Director of the Wind Energy Center, University of Massachusetts

Educating children about the basics of renewable energy is crucial as energy issues are so prominent in the news and in our communities today-but that doesn't mean renewables are easy to do! How do solar and wind energy systems work? What are the misconceptions about renewable energy sources and technologies? How are water resources and energy resources interrelated? Mr. Quinlan's research includes over 25 years of measuring the wind, estimating how wind turbines will perform, and working with communities to site renewable energy projects. He will discuss some of his current projects as well as his work in education. Mr. Quinlan works to teach educators and elementary and middle school students about energy concepts using hands-on, engaging investigations and design/build projects.

Using Inquiry in the Science Classroom

Kathleen Neville, Senior Program Naturalist, Amoskeag Fishways Learning and Visitors Center

Traditional, teacher centered classrooms do not become inquiry-based learning communities overnight. What are the challenges of helping teachers shift to an "inquiry-based approach"? What strategies can teacher educators use to make this transition smooth? Developing an in-depth understanding of the components of inquiry methodology is vital to helping teachers use inquiry successfully. Sprinkled with success stories and plenty of time to share "what works" this seminar will model an in-depth water investigation to demonstrate components of inquiry, as well as proven techniques for working with elementary and middle school teachers.



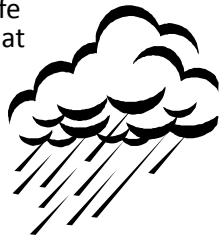
The Implications of Climate Change in New England and Bringing Data into the Classroom

Wednesday, March 18th
Tower Hill Botanic Garden, Boylston, MA

Implications of Climate Change for the Conservation of New England Ecosystems

Hector Galbraith, Manomet Center for Conservation Sciences

Learn about Dr. Galbraith's research on the impacts of climate change on New England habitats. Dr. Galbraith will discuss the implications of these changes on wildlife and wildlife habitats and how this affects management strategies and resource planning for communities. His work includes developing a methodology for assessment of climate change vulnerabilities of wildlife and wildlife habitats and designing a process that can be used to identify and evaluate climate change conservation strategies. Hands-on, minds-on student projects in which they collect data within their own communities can be modeled after real-time research conducted by scientists.



Translating Science Concepts and Research into Inquiry-Based Activities

Barbara Waters, Education Consultant; Sandra Ryack-Bell, Executive Director, MITS; and Jane Heinze-Fry, Program Director, MITS

There are clear challenges and benefits in tackling complex issues like climate change and water and energy resources with elementary and middle students. How can we create successful, yet manageable inquiry activities for any grade level classroom based on current scientific data and research techniques? What do high-quality inquiry activities look like in Kindergarten classrooms? How are inquiry activities different as you approach the middle grades? How can inquiry be used to measure what students are learning? This seminar will model effective teaching practices based on up-to-the-minute educational research on inquiry. How do students' concepts of water and energy build upon each other over time? Get your "hands-on" and wrap your "minds-around" planning activities at each level.

Exploring Water Concepts and Creating Inquiry-Based Activities

Friday, April 17th
Worcester Art Museum, Worcester, MA

Exploring Watersheds and Pure Water for the World

Dr. Kevin Curry, Bridgewater State College, Professor of Biological Sciences, Watershed Access Lab Coordinator

Speaking on water concepts, water environments and regional/international watershed initiatives, Dr. Curry will address the Watershed Access Lab program for teachers at Bridgewater State College, as well as ongoing nutrient monitoring studies within the Taunton River Watershed and his recent work in Cambodia. He will present results of several years of monitoring nutrients in river tributaries to illustrate how local watershed projects involving hydrology, chemistry, and environmental science can be used as applications to teach math and science concepts.

Linking Science Investigations in the K-8 Classroom—Integrating Content to Align with the Frameworks

Jake Foster, Director of Science and Technology/ Engineering and Joan McNeil, Statewide Manager, Reading Network MA Department of Elementary and Secondary Education; and Sandra Ryack-Bell, Executive Director, MITS

Inquiry-based science activities can be integrated into all areas of the curriculum. Informal institutions have the tools necessary to provide these integrated learning experiences. Linking STEM activities with other content areas involves more than reading books about science or looking at current issues in the news. How can reading strategies support thinking and learning in science? How can the inquiry approach be used to enhance students' writing and communication skills? Meaningful connections between science, literacy, social studies, and math motivate students and enliven the classroom, all while preparing students for MCAS and other standards-based tests, and building the foundation for future learning.